

## ABSTRACT

A method is provided for producing a metal-based carbon fiber composite material lightweight, high in the thermal conductivity and also capable of controlling the direction of heat flow, while inhibiting metal carbide formation. The method for producing the metal-based carbon fiber composite material comprises the steps of: obtaining a metal fiber mixture by physically mixing carbon fiber with metal powder; filling the metal fiber mixture into a jig, while the metal fiber mixture is aligned; and setting the jig in an air, vacuum or inert gas atmosphere and directly supplying pulse electric current to the metal fiber mixture, with applying a pressure, to effect sintering by the heat generated therefrom. Here, the composite material contains 10 to 80 % by weight of carbon fiber based on a total weight of the composite material and is sintered at 70% or more of ideal density.